energy savings equal to the combined output of almost two of the three units of TVA's Browns Ferry nuclear plant. In other words, the $410 million could buy enough fluorescent lightbulbs to equal two nuclear reactors. Or the $410 million would be the equivalent of 3,700 megawatt wind turbines that would span a 550-mile ridge line, more than twice the distance from Bristol in the northeast part of Tennessee to Chattanooga, which is about the only place in Tennessee that wind power could actually go, along those ridgetops. Or with $410 million, we could pay the $100 per month electric bill for Tennessee's 2.5 million residential TVA customers for 1½ months each year. Or if the goal is simply clean air, it would be better, I respectfully submit, to spend the $410 million purchasing one new scrubber each 9 months to clean emissions from TVA's coal-fired powerplants. I strongly back renewable power wherever it makes sense. In our State, I have worked hard to expand solar energy. The solar energy industry gave me an award last year for that work. I was the principal sponsor of the tax credit for homeowners to put solar panels on their homes. I have worked with the Tennessee Farm Bureau to encourage the use of biomass as a renewable energy. But this—and I will try to be a little bit more specific in the next 10 or 12 minutes—this proposal amounts to a wind portfolio standard which simply does not fit the Tennessee Valley nor, I submit, any other part of our region. It simply does not work in the Southeast.

Why is there a wind portfolio standard? There are other forms of renewable energy, of course, but they don't all fit in the definition, nor do all types of clean, carbon-free energy fit within the definition. Seventy percent of our carbon-free electricity in America comes from nuclear power. About 33 percent of TVA's power is carbon-free nuclear power. That doesn't count within the Bingaman definition. Neither does the existing 7 percent of clean, completely clean power that comes from hydro, from dams.

That makes about 40 percent of TVA's electricity carbon, sulfur, mercury, and nitrogen free, ranking it 16th among all the States in terms of producing carbon-free energy. As I said, Tennessee is on the honor roll. Yet we Tennesseans would still be subjected either to these taxes or putting these wind turbines along our scenic mountains, which I will discuss.

According to the Energy Information Agency assessment of the Bingaman proposal, 4 years ago, wind and, to a lesser extent, biomass are projected to be the most important renewable resources stimulated by the renewable portfolio standard.

There is some other evidence that biomass will be stimulated, but I think it is a fair comment to say that this is mostly a wind portfolio standard. And my argument is, that may be fine in North Dakota—which the Senator from North Dakota says is the Saudi Arabia of wind—maybe it works there, and maybe North Dakotans want to see the wind turbines there, but it doesn't work in Tennessee and in most of the Southeast because the wind simply doesn't blow enough to produce much electricity.

The National Academy of Sciences says 93 percent of potential wind energy capacity occurs west of the Mississippi River. We can see on this chart that in this white area, that is where there is the least amount of wind. There may be plenty of it somewhere else but not in Tennessee and not in the South. There is only one wind farm in this entire southeastern part of the United States. That is a TVA wind farm on Buffalo Mountain, which I will show in just a moment.

TVA had hoped that the wind on Buffalo Mountain would blow to produce electricity about 35 to 38 percent of the time. They have been disappointed that it only blows about 19 to 24 percent of the time. And in August, when we are sitting on the porches sweating, perspiring, and wanting our fans on and air-conditioning on, the winds on the only wind farm in the southeast—Buffalo Mountain—blew just 7 percent of the time. That is not an estimate. That is an actual count from TVA and the wind farm.

So the only places in the southeast region, if we can go to the next chart, that have wind resources are the ridges and the crests. Maybe unlike Iowa and North Dakota where they can have large wind farms, maybe even in Colorado they can have large wind farms, but in Tennessee, the only places that wind possibly works are on the ridges and the crests. In addition to being the places with the most wind, the ridges and the crests are also in the most visited national park in the United States, the Great Smoky Mountains National Park. Those are the highest mountains in the Eastern United States. They run up through Pennsylvania as well. They are the Great Smoky Mountains and the mountains around them. They are the reason most of us live in those areas.

It is quite a sight to see when you put wind turbines on top of those mountains. It is a sight that I would rather not see. Here is West Virginia, which is north of the southeastern part of the United States. Basically it cuts off the whole tops of those mountains. In my opinion, it makes strip mining look like a decorative art. These are 400- or 300-feet turbines. These are not your grandmother's windmills. They are white and large and have flashing red lights on top of them. You can see them for 10, 12, 14 miles away.

Then, since they are on remote ridgetops, they have to dig large power lines down through whomever's backyard to get there. It is quite a dislocation in the scenery. So one would think there would have to be a big payoff before we would take some of the most beautiful parts of the United States and basically ruin the mountaintops.

Here is what it looks like in Tennessee. You can get a little sense of how big these turbines are. In Tennessee, we like football and we can put things in perspective, sometimes putting things in football terms. Each of these wind turbines is twice as tall as the skyboxes at Neyland Stadium, which is the second largest football stadium in the United States. Penn State has one, I guess, about the same size. These rotor blades, which go round and round, stretch from the 10-yard line to the 10-yard line. I can see these turbines from the Pellissippi Parkway in Tennessee from about 14 miles away. This is at about 3,500 feet. These are some of our most beautiful vistas in Tennessee.

The problem is, even here, which ought to be a prime spot—this is the reason TVA put the turbines here—it didn't work very well. It was a disappointment. As I mentioned, in August, the wind turbines only operated 7 percent of the time. Wind tends to be strongest during the winter months and at dawn and dusk, but demand for electricity is highest during the summer and during the day. Basically, when we need the wind, it doesn't blow. And a point that many people often miss is that you can't store it. Unlike more conventional forms of power, you use it or you lose it. So it is of minimal help.

Also, it is more expensive. I have a chart showing the expense. Let's take nuclear power which produces 70 percent of the carbon-free electricity in the United States today, and wind, which is also carbon free. Actually, both are completely free of carbon, sulfur, mercury, and nitrogen, which are the problems for clean air in the Tennessee region. Let's compare a 1,000-watt nuclear plant reactor and a 1,000-megawatt capacity wind farm. The 1,000-megawatts is about the size of a new nuclear reactor. The new Browns Ferry plant in Tennessee that opened the other day is 1,280 megawatts. This column is the number of hours per year for both nuclear and wind. And this second column is the capacity factor.

In plain English, this is how much they operate. For TVA, its nuclear powerplants, which produce about one-third of our electricity and most of our carbon-free electricity, the nuclear powerplants operate 92 percent of the time. The wind turbines operate, at best, 24 percent of the time in the Southeast, in the area we know about. Remember, there is only one wind farm in the Southeast. We have it, and that is what it does.

The cost of electricity is up to twice as much for wind over nuclear. That is what people in the utility industry call the all-in cost—that is, including the cost of building the facility and the cost of operating the facility.

So the brief analysis is that wind is more expensive, on a per unit energy generated basis, and produces much less energy than nuclear power, for example. In addition to that, if we build